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10/694,456	10/27/2003	Ki-Cheol Lee	5000-1-472	2495
<div>33942 7590 05/17/2007</div> <div>CHA & REITER, LLC</div> <div>210 ROUTE 4 EAST STE 103</div> <div>PARAMUS, NJ 07652</div>				
			<div>EXAMINER</div> <div>WANG, QUAN ZHEN</div>	
			<div>ART UNIT</div> <div>2613</div>	<div>PAPER NUMBER</div>
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/694,456

Applicant(s)

LEE ET AL.

Examiner

Quan-Zhen Wang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-12 and 15 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/2/07</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 7-12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art figs. 1-2 (APA) in view of Bodeep et al. (U.S. Patent US 5,822,102).

Regarding claims 1 and 9, APA (figs. 1-2) discloses a Wavelength division multiplexing-passive optical network that transmits broadcast and communication data, the network comprising: an optical line terminal (figs. 1-2, OLT) to (1) receive a digital broadcast signal from a broadcasting network (figs. 1 and 2, broadcasting network) and a first communication signal from an internet protocol network (figs. 1 and 2, IP network), and (2) transmit the digital broadcast signal and the first communication signal as optical signals (figs. 1-2, $\lambda 1$ - $\lambda 64$); an optical network terminal/optical network unit (fig. 1, element 12 and fig. 2, element 22) as a user-side device for transferring (1) the optical signals, from the optical line terminal, to a service user (not shown), and (2) user data from the service user to the optical line terminal; a first WDM demultiplexer (fig. 2, WDM 23) for WDM-demultiplexing the single broadcast/communication optical signals from the optical line terminal, and transferring it to the optical network terminal/optical

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network unit; and a first WDM multiplexer (fig. 2, WDM 24) for WDM-multiplexing the user data from the optical network terminal/optical network unit and transferring it to the optical line terminal. The APA differs from the claimed invention in that the APA does not specifically disclose that the broadcast signal and the communication signal are integrated as a single integrated optical signal. However, it is well known in the art to integrate a broadcast signal and a communication signal to form a single integrated optical signal for transmission in a PON. For example, Bodeep discloses (fig. 1) to integrate a broadcast signal (fig. 1, signal from video server) and a communication signal (fig. 1, signal from data server) to form a single integrated optical signal (fig. 1, signal from XMTR 130) for transmission in a PON. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the signal integration method of Bodeep in the system of APA in order to transmit both a broadcast signal and a communication signal to a user with the same optical transmitter.

Regarding claims 2 and 10, the APA further discloses that the optical line terminal is further enabled to transfer a second communication signal, received from the service user, to the Internet protocol network (fig. 2, ONT/ONU 32).

Regarding claims 3 and 11, Bodeep further discloses that the optical line terminal includes a photoelectric converter (fig. 1, F.O.XMTR 130) used to produce the single integrated optical signal.

Regarding claims 4 and 12, Bodeep further discloses that the user data includes channel-information data of a digital broadcast desired by the service user and the second communication signal (column 6, lines 6-12).

Regarding claim 7, Bodeep further discloses that a single wavelength for optical transmission between the optical line terminal and the optical network terminal/optical network unit is assigned to each service user (fig. 1).

Regarding claims 8 and 15, the APA (fig. 1) further discloses that the optical line terminal further includes an optical amplifier for optically-modulating and amplifying an analog broadcast signal (inherent), and an optical coupler (inherent) for combining the analog broadcast optical signal, so as to receive and transmit the analog broadcast signal, the network further comprising: an optical splitter (fig. 1, splitter 15) for separating an optical signal, combined with the analog broadcast signal, from the optical line terminal into the analog broadcast signal and the single integrated optical signal, and transmitting the separated signals; a photoelectric converter (fig. 1, O/E 16) for photoelectrically converting the analog broadcast signal separated through the optical splitter; and a radio frequency splitter (fig. 1, RF splitter 17) for distributing the photoelectrically-converted electrical analog broadcast signal to the optical network terminal/optical network unit. The APA differs from the claimed invention in that the APA does not specifically disclose that the broadcast signal and the communication signal are integrated as a single integrated optical signal. However, it is well known in the art to integrate a broadcast signal and a communication signal to form a single integrated optical signal for transmission in a PON. For example, Bodeep discloses (fig.

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1) to integrate a broadcast signal (fig. 1, signal from video server) and a communication signal (fig. 1, signal from data server) to form a single integrated optical signal (fig. 1, signal from XMTR 130) for transmission in a PON. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the signal integration method of Bodeep in the system of APA in order to transmit both a broadcast signal and a communication signal to a user with the same optical transmitter.

Allowable Subject Matter

3. Claims 5-6 and 13-14 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

4. Applicant's arguments filed March 26, 2007 have been fully considered but they are not persuasive.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicant argues that the APA fails to teach receiving a digital broadcasting signal from a broadcasting network and a first communication signal from an Internet

protocol network. However, the APA figs. 1 and 2 clearly illustrates that the OLT receives a digital broadcasting signal from a broadcasting network (figs. 1 and 2, broadcasting network) and a first communication signal from an Internet protocol network (figs. 1 and 2, IP network). The APA differs from the claimed invention in that the APA does not specifically disclose that the broadcast signal and the communication signal are integrated as a single integrated optical signal. However, it is well known in the art to integrate a broadcast signal and a communication signal to form a single integrated optical signal for transmission in a PON. For example, Bodeep discloses (fig. 1) to integrate a broadcast signal (fig. 1, signal from video server) and a communication signal (fig. 1, signal from data server) to form a single integrated optical signal (fig. 1, signal from XMTR 130) for transmission in a PON. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the signal integration method of Bodeep in the system of APA in order to transmit both a broadcast signal and a communication signal to a user with the same optical transmitter.

Applicant argues that Bodeep discloses a "Data Serve", not an IP network. However, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). For the instant case, the APA figs. 1 and 2 clearly illustrates that the OLT receives a digital broadcasting signal from a broadcasting network (figs. 1 and 2,

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broadcasting network) and a first communication signal from a internet protocol network (figs. 1 and 2, IP network).

Applicant further argues that “nowhere in Bodeep’s disclosure does it disclose a central office which provides for the integration of broadcast and communication signals”. However, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). For the instant case, the APA figs. 1 and 2 clearly disclose that a central office (OLT) receives a digital broadcasting signal from a broadcasting network (figs. 1 and 2, broadcasting network) and a first communication signal from a internet protocol network (figs. 1 and 2, IP network) and transmits the received signals to users. The APA differs from the claimed invention in that the APA does not specifically disclose that the broadcast signal and the communication signal are integrated as a single integrated optical signal. However, it is well known in the art to integrate a broadcast signal and a communication signal to form a single integrated optical signal for transmission in a PON. For example, Bodeep discloses (fig. 1) to integrate a broadcast signal (fig. 1, signal from video server) and a communication signal (fig. 1, signal from data server) to form a single integrated optical signal (fig.1, signal from XMTR 130) for transmission in a PON. Therefore, it would have been obvious for one of ordinary skill in the art at the time when the invention was made to incorporate the signal integration method of Bodeep in the system of APA in order to

transmit both a broadcast signal and a communication signal to a user with the same optical transmitter.

In view of the above discussion, the combination of the references discloses all the claimed limitations of claims 1, 8-9, and 15. Therefore, the rejections of claims 1, 8-9, and 15 still stand. For the same reasons, the rejections of claims 2-4, 7, and 10-12 still stand.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quan-Zhen Wang whose telephone number is (571)


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272-3114. The examiner can normally be reached on 9:00 AM - 5:00 PM, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

qzw
5/7/2007


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